

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.(currently amended) A musical instrument sound detection system

comprising:

a fibre optic acoustic sensor;

a source of electromagnetic radiation optically coupled to said fibre optic acoustic sensor and operable to input electromagnetic radiation to said fibre optic acoustic sensor;
and

an electromagnetic radiation detector arranged to receive electromagnetic radiation output from said fibre optic acoustic sensor and operable to detect at least one property of said output electromagnetic radiation; wherein

said fibre optic acoustic sensor is responsive to sound generated by a musical instrument and is operable to vary said at least one property of said input electromagnetic radiation in response to that sound in order to generate the output electromagnetic radiation, said electromagnetic radiation detector being operable to detect variations in said at least one property of said output electromagnetic radiation indicative of this sound generated by the musical instrument and to produce output signals in response thereto

~~characterised in that~~wherein

said fibre optic acoustic sensor comprises a fibre laser acoustic sensor, comprising an optical fibre doped to provide a doped lasing volume, said fibre having two gratings

provided in said doped volume, said fibre laser acoustic sensor being operable to vary a wavelength of said input electromagnetic radiation in response to the sound from the musical instrument, and said electromagnetic radiation detector being operable to detect variations in wavelength of said output electromagnetic radiation.

2.(original) A musical instrument sound detection system according to claim 1, wherein said optical fibre is coated with polyurethane.

3.(currently amended) A musical instrument sound detection system according to ~~any of the preceding claims~~claim 1, wherein said fibre optic acoustic sensor comprises attachment means for attachment to a musical instrument.

4.(currently amended) A musical instrument sound detection system according to ~~any preceding claim~~claim 1, wherein said musical instrument is a stringed musical instrument.

5.(currently amended) A musical instrument sound detection system according to ~~claim 3 or claim 4~~claim 3, wherein said attachment means are for attachment across the sound hole, to the bridge, body, acoustic chamber or the soundboard of said stringed musical instrument.

6.(currently amended) A musical instrument sound detection system

according to ~~any preceding claim 1~~, said system further comprising a plurality of fibre optic acoustic sensors, said plurality of fibre optic sensors being arranged in series such that electromagnetic radiation from said source passes through each of said sensors in turn.

7.(original) A musical instrument sound detection system according to claim 6, wherein said plurality of fibre optic acoustic sensors are arranged in series along an optical fibre, the distance between respective sensors being such that individual fibre optic sensors may be arranged on different musical instruments with optical fibre connecting said plurality of sensors.

8.(currently amended) A musical instrument sound detection system

according to ~~any preceding claim 1~~, said musical instrument sound detection system further comprising a signal processor operable to process said output signals received from said electromagnetic radiation detector and to produce acoustic signals that are compatible with a conventional amplifier and/or sound recording system therefrom.

9.(currently amended) A musical instrument having a musical instrument

sound detection system according to ~~any one of claims 1 to 5~~claim 1 attached thereto,

wherein said fibre optic acoustic sensor or sensors are arranged to receive sound generated by said musical instrument.

10.(original) A musical instrument according to claim 9, wherein said musical instrument is a solid bodied guitar.

11.(original) A method of detecting sound from at least one musical instrument comprising the steps of:

- (i) arranging a fibre optic acoustic sensor to receive sound generated by a musical instrument, the sensor comprising a fibre-laser;
- (ii) detecting variations in the output wavelength of the fibre-laser..

12.(original) The method of claim 11, wherein step (i) of said method comprises attaching said fibre optic acoustic sensor to said at least one musical instrument.

13.(original) The method of claim 12, wherein said musical instrument is a stringed musical instrument.

14.(original) The method of claim 13, wherein said fibre optic acoustic sensor is attached to the bridge of said stringed instrument.

15.(original) The method of claim 13, wherein said fibre optic acoustic sensor is attached to the soundboard or body of said stringed instrument.

16.(original) The method of claim 13, wherein said fibre optic acoustic sensor is attached between the sound board and the bridge of said stringed instrument.

17.(original) The method of claim 11, said method further comprising the step of:
(iii) processing said output signals to produce acoustic signals that are compatible with a conventional amplifier and/or sound recording system.

18.(original) The use of a fibre optic acoustic sensor comprising a fibre-laser within a musical instrument sound detection system to detect the sound generated by at least one musical instrument